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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 10/706,000      | 11/12/2003  | Kuppsuamy Kanakarajan | HP0087USNA          | 6531             |

23906 7590 11/16/2005

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LEGAL PATENT RECORDS CENTER  
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WILMINGTON, DE 19805

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| EXAMINER |
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LAM, CATHY FONG FONG

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| ART UNIT | PAPER NUMBER |
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1775

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/706,000

Applicant(s)

KANAKARAJAN ET AL.

Examiner

Cathy Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,14,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 2,4-13 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08).  
Paper No(s)/Mail Date 06-06-2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

In view of the amendment filed on September 02, 2005, the 112 rejections and objections have been withdrawn. The claims however have the following 112 issues:

***Claim Rejections - 35 USC § 112***

1. Claims 1, 14, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 18 and 19, it is unclear what the phrases "said polyimide base polymer having a glass transition temperature from about 150, 160, 170, 180..... or 200°C", "a z-axis coefficient of thermal expansion of less than 80, 85,..... or 150 ppm/°C" and in claim 18 "10, 15, 20, .....and 200 °C" are referring to? It is unclear why didn't applicant state a temperature range, for example -- said polyimide base polymer having a glass transition temperature from about 150 °C to 200 °C --, and -- a z-axis coefficient of thermal expansion of less than 80 ppm/°C --. In claim 18, applicant can state the difference in lamination temperature range from 5 °C (ie. minimum from 10° to 15°C) to 190 °C (ie. maximum from 10°C to 200°C).

Furthermore, claims 1 and 19 involve a high glass transition temperature polyimide layer, it is unclear what constitutes this polyimide layer. It is unclear whether or not this high glass transition temperature polyimide layer has a Tg higher than one of the (listed) temperatures of the lower glass transition temperature polyimide layer or that the Tg is higher than 200 °C? Applicant is suggested to clearly distinguish and state in the claim what this high Tg polyimide layer is.

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Claim 14 is structurally indefinite, as it is unclear whether "a first and second outer layer" are referring to the low glass transition temperature polyimide layers? Furthermore, there is no antecedent basis for "the additional conductive layers".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
November 09, 2005